

Operating Instructions



Thank you for buying pressure switches from BC-Systemtechnik, Dortmund. These operating instructions will help you use the switches safely and properly.

To ensure that the switches function smoothly and for your own safety, read these operating instructions carefully before starting installation work. If after reading these instructions you have any questions, you can contact BC-Systemtechnik at the following numbers:

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These operating instructions have been written for pressure switches:

Pressure Switch BC-DB-***	Ex I M2 Ex ia I Mb	DMT 02 ATEX E 157
Pressure Switch BC-DC-***	Ex II 2G Ex ia II T6 Gb	

General requirements

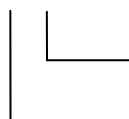
- Failure to comply with these operating instructions and improper installation or maintenance can damage the pressure switches. In this case no warranty can be claimed for the products or any accessory and we are under no liability whatever.
- Always use the products within permitted specifications as indicated on nameplates and labels.
- Follow good engineering practice in the selection and use of the products.
- Note that pipelines or equipment of pressurized systems must not be opened.
- **Caution! Risk of injury; do not exceed prescribed pressure limits.**

If the products are used in **potentially explosive atmosphere**, they must comply with all construction and VDE requirements. This includes mandatory regulations and the instructions issued by equipment developers, builders and operator.

The pressure switch is designed for use with neutral media or compressed air.

Type code

Pressure switch BC-D*-***



Pressure range: Bar

Industry: Mining (B) or
Chemical Industry (C)

Description

The pressure of the monitored medium impinging on the sensor acts against a flat diaphragm or piston (depending on the pressure range). A lever and spring mechanism provides chatter-free switching by a cascade snap-action switch.

The BC-D type pressure switch is a pressure-sensitive switch which monitors or maintains a preset (pressure) value within defined limits by automatic making/breaking intrinsically safe electric circuit.

Depending on the pressure range to be controlled / monitored, two different types of switch are available. The diaphragm type is good for pressures in the range of 2 to 32 bar. The piston switch is preferred for higher pressures from 60 to 250 bar. Both pressure switch versions are technically identical; the active surface of piston switches is a little smaller.

Electrical characteristics

The electrical characteristics are defined in the certificate. The information is printed on the nameplate of the switch and must be complied with.

Max. switching voltage	DC 30 V
Max. switching current	2,5 A UC

Limit values

The pressure switches will operate reliably if the specified **limits for pressure** (depend on switch type) **and temperature** ($-30\text{ °C} \leq T_{\text{amb}} \leq +60\text{ °C}$) are observed and all instructions in the data sheet and the consignment note followed.

Switches used in a potentially hazardous atmosphere must comply with all applicable local requirements. A statement of conformity pursuant to EC directive 94/9/EC is supplied with the switch.

Temperature

The ambient temperature must not exceed the range of $-30\text{ °C} \leq T_{\text{amb}} \leq +60\text{ °C}$.

Tools

A standard open-end wrench and a screwdriver are needed for mounting the pressure switches.

Mounting / Installation

Note that the pressure switch must never be used as a lever. The switches can be mounted in any position. Make sure that the switches are mounted firmly and securely. Only trained technical personnel is authorized to fix the switches by the two screw holes provided in the socket.

- It must be ensured that the pressure switch is only installed in a clean pipeline/equipment.
- Make sure that when you put the switch in place for mounting the flange O-ring is not damaged.
- Make sure that all lines and cable ends are inserted and connected to the terminal properly.
- To avoid short circuit and line break, do not kink cables.
- Avoid strong pulsation and pressure surges.
- Before starting the use of the switch, make sure that the equipment in which it is installed complies with all applicable regulations and requirements of the EMC directive.

The pressure switches must be installed by **trained technical personnel** observing the applicable **instructions**.

Remove the pressure switch in reverse order of installation. Make sure that no pressure builds up when the switch is removed. Disconnect the power supply to the switch and consult an authorized dealer.

Operation

- The pressure switches can be used with gases or fluids which do not damage the system or the materials of which it is made.
- Do not expose the switch to liquid or corrosive media outside.
- The operating pressure depends on the type of switch you use.
- Do not bend or twist the system.
- Avoid sharp bends of connecting cables and wires to avoid short circuit and line break.

Repairs (maintenance and troubleshooting)

The pressure switches require no maintenance. If necessary, inspect the connections, electrical specifications, working pressure and correct installation.

Settings (see Fig. 2):

Set the upper switching pressure at setscrew 2.
The setting is displayed at scale 3.

Set the lower switching pressure at setscrew 4.
The upper setting will not change. The setting is displayed at scale 5.

The scale is not calibrated. Check settings with a pressure gauge.

Reset: Standard version: Automatic resetting if pressure drops to below switching point.
Version with manual reset: Pressure drops below the upper limit or rises below the lower limit and press the reset button 1 (Fig. 2).

Electrical connection:

See Fig. 1

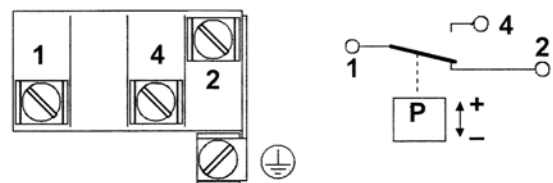


Fig. 1

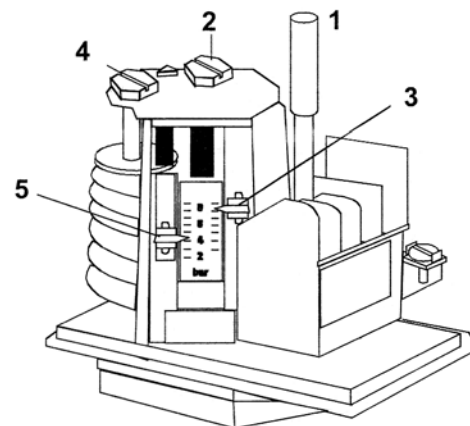


Fig. 2

Training

If trained technical personnel are employed for installation of the switches, no training is needed because the switches are easy to use.

Special requirements

The use of the pressure switches is not subject to any special requirements.

Name plate

The pressure switch has a **nameplate** attached at a conspicuous place at the switch. The nameplate is riveted or glued. The information on the nameplate is permanently legible and contains the following:

Manufacturer's name, address (post box) and trade name,
type designation as defined by BC-Systemtechnik (with year of manufacture),
the ex-atmosphere code Ex I M2 Ex ia I Mb or Ex II 2G Ex ia IIC T4 Gb,
the code of the type of protection,
the symbol of the group of explosion-hazard component,
the name and mark of the testing laboratory,
the number of the certificate,
ambient temperature data: $-30\text{ °C} \leq T_{\text{amb}} \leq +60\text{ °C}$
as well as pressure, voltage and current specifications.